TITLE: DETERMINATION OF AIR-VOID PARAMETERS OF HARDENED CONCRETE - PHASE I OF ROUND ROBIN TEST PROGRAM.

FINAL REPORT

BY

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22pp

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MICROMEDIA

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May 19, 1987

DSS Contract Serial No.: 23440-6-9201/01-SQ
File No.: 33SQ.23440-6-9201.

Air Void Parameters of Hardened Concrete.

Specimen	Air Content %	Specific Surface mm^{-1}	Spacing Factor mm	Voids per mm.
AVS-1A	2.4	4.6	1.499	0.028
AVS-1B	2.6	4.7	1.345	0.031
AVS-2A	2.6	21.4	0.311	0.138
AVS-2B	3.4	18.3	0.304	0.156
AVS-4A	2.6	26.4	0.249	0.170
AVS-4B	3.1	25.2	0.225	0.197
AVS-5A	4.7	19.5	0.268	0.229
AVS-5B	4.5	29.8	0.171	0.332
AVS-6A	3.8	46.9	0.120	0.446
AVS-6B	3.9	44.4	0.129	0.438
AVS-7A	4.3	43.9	0.113	0.471
AVS-7B	4.7	37.1	0.134	0.437
AVS-8A	6.3	32.9	0.131	0.517
AVS-8B	5.5	46.3	0.099	0.637
AVS-10A	7.3	43.7	0.088	0.794
AVS-10B	8.7	38.5	0.080	0.839
AVS-11A	9.1	45.8	0.068	1.046
AVS-11B	8.5	50.5	0.066	1.072
AVS-12A	9.8	48.0	0.061	1.173
AVS-12B	9.8	50.6	0.065	1.243

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Date: MAY 19, 1987
File No: CANMET 1987
Report No: 1

REPORT OF TEST

MICROSCOPIC DETERMINATION OF PARAMETERS OF THE AIR-VOID SYSTEM IN HARDENED CONCRETE USING THE MODIFIED POINT-COUNT METHOD, ASTM: C457-71

Sample Identification: CANMET SAMPLS AVS-1A

Orientation of measured surface: NOT APPLICABLE

Total length of traverse (mm)..... 2413

Total number of stops observed..... 1925

PARAMETERS OF AIR-VOID SYSTEM BASED ON ASSUMED CONCRETE DESIGN STRENGTHS AND ASSUMED PASTE CONTENTS

Design Strength (psi)	3,000	4,000	5,000
Paste Content (%)	26	30	34
Air-Void Content (%)	2.4	2.4	2.4
Specific Surface (mm^{-1})	4.6	4.6	4.6
Spacing Factor (mm)	1.412	1.505	1.590

PARAMETERS OF AIR-VOID SYSTEM BASED ON PATSE CONTENT DETERMINED BY MICROSCOPIC EXAMINATION OF THE CONCRETE SPECIMEN

Air-Void Content (%)..... 2.4

Specific Surface (mm^{-1})..... 4.6

Spacing Factor (mm)..... 1.499

Air/Paste Ratio 0.08

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Date: MAY 19, 1987
File No: CANMET 1987
Report No: 2

REPORT OF TEST

MICROSCOPIC DETERMINATION OF PARAMETERS OF THE AIR-VOID SYSTEM IN HARDENED CONCRETE USING THE MODIFIED POINT-COUNT METHOD, ASTM: C457-71

Sample Identification: CANMET SAMPLE AVS-1B

Orientation of measured surface: NOT APPLICABLE

Total length of traverse (mm)..... 2445

Total number of stops observed..... 1950

PARAMETERS OF AIR-VOID SYSTEM BASED ON ASSUMED CONCRETE DESIGN STRENGTHS AND ASSUMED PASTE CONTENTS

Design Strength (psi)	3,000	4,000	5,000
Paste Content (%)	26	30	34
Air-Void Content (%)	2.6	2.6	2.6
Specific Surface (mm^{-1})	4.7	4.7	4.7
Spacing Factor (mm)	1.348	1.436	1.518

PARAMETERS OF AIR-VOID SYSTEM BASED ON PATSE CONTENT DETERMINED BY MICROSCOPIC EXAMINATION OF THE CONCRETE SPECIMEN

Air-Void Content (%)..... 2.6

Specific Surface (mm^{-1})..... 4.7

Spacing Factor (mm)..... 1.345

Air/Paste Ratio 0.10

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Date: MAY 19, 1987
File No: CANMET 1987
Report No: 3

REPORT OF TEST

MICROSCOPIC DETERMINATION OF PARAMETERS OF THE AIR-VOID SYSTEM IN HARDENED CONCRETE USING THE MODIFIED POINT-COUNT METHOD, ASTM: C457-71

Sample Identification: CANMET SAMPLE AVS-2A

Orientation of measured surface: NOT APPLICABLE

Total length of traverse (mm)..... 2438

Total number of stops observed..... 1945

PARAMETERS OF AIR-VOID SYSTEM BASED ON ASSUMED CONCRETE DESIGN STRENGTHS AND ASSUMED PASTE CONTENTS

Design Strength (psi)	3,000	4,000	5,000
Paste Content (%)	26	30	34
Air-Void Content (%)	2.6	2.6	2.6
Specific Surface (mm^{-1})	21.4	21.4	21.4
Spacing Factor (mm)	0.297	0.317	0.335

PARAMETERS OF AIR-VOID SYSTEM BASED ON PATSE CONTENT DETERMINED BY MICROSCOPIC EXAMINATION OF THE CONCRETE SPECIMEN

Air-Void Content (%)..... 2.6

Specific Surface (mm^{-1})..... 21.4

Spacing Factor (mm)..... 0.311

Air/Paste Ratio 0.09

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Date: MAY 19, 1987
File No: CANMET 1987
Report No: 4

REPORT OF TEST

MICROSCOPIC DETERMINATION OF PARAMETERS OF THE AIR-VOID SYSTEM IN HARDENED CONCRETE USING THE MODIFIED POINT-COUNT METHOD, ASTM: C457-71

Sample Identification: CANMET SAMPLE AVS-2B

Orientation of measured surface: NOT APPLICABLE

Total length of traverse (mm)..... 2416

Total number of stops observed..... 1927

PARAMETERS OF AIR-VOID SYSTEM BASED ON ASSUMED CONCRETE DESIGN STRENGTHS AND ASSUMED PASTE CONTENTS

Design Strength (psi)	3,000	4,000	5,000
Paste Content (%)	26	30	34
Air-Void Content (%)	3.4	3.4	3.4
Specific Surface (mm^{-1})	18.3	18.3	18.3
Spacing Factor (mm)	0.307	0.327	0.346

PARAMETERS OF AIR-VOID SYSTEM BASED ON PATSE CONTENT DETERMINED BY MICROSCOPIC EXAMINATION OF THE CONCRETE SPECIMEN

Air-Void Content (%)..... 3.4

Specific Surface (mm^{-1})..... 18.3

Spacing Factor (mm)..... 0.304

Air/Paste Ratio 0.13

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Date: MAY 19, 1987
File No: CANMET 1987
Report No: 5

REPORT OF TEST

MICROSCOPIC DETERMINATION OF PARAMETERS OF THE AIR-VOID SYSTEM IN HARDENED CONCRETE USING THE MODIFIED POINT-COUNT METHOD, ASTM: C457-71

Sample Identification: CANMET SAMPLE AVS-4A

Orientation of measured surface: NOT APPLICABLE

Total length of traverse (mm)..... 2432

Total number of stops observed..... 1940

PARAMETERS OF AIR-VOID SYSTEM BASED ON ASSUMED CONCRETE DESIGN STRENGTHS AND ASSUMED PASTE CONTENTS

Design Strength (psi)	3,000	4,000	5,000
Paste Content (%)	26	30	34
Air-Void Content (%)	2.6	2.6	2.6
Specific Surface (mm^{-1})	26.4	26.4	26.4
Spacing Factor (mm)	0.241	0.257	0.271

PARAMETERS OF AIR-VOID SYSTEM BASED ON PATSE CONTENT DETERMINED BY MICROSCOPIC EXAMINATION OF THE CONCRETE SPECIMEN

Air-Void Content (%)..... 2.6

Specific Surface (mm^{-1})..... 26.4

Spacing Factor (mm)..... 0.249

Air/Paste Ratio 0.09

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Date: MAY 19, 1987
File No: CANMET 1987
Report No: 6

REPORT OF TEST

MICROSCOPIC DETERMINATION OF PARAMETERS OF THE AIR-VOID SYSTEM IN HARDENED CONCRETE USING THE MODIFIED POINT-COUNT METHOD, ASTM: C457-71

Sample Identification: CANMET SAMPLE AVS-4B

Orientation of measured surface: NOT APPLICABLE

Total length of traverse (mm)..... 2405

Total number of stops observed..... 1919

PARAMETERS OF AIR-VOID SYSTEM BASED ON ASSUMED CONCRETE DESIGN STRENGTHS AND ASSUMED PASTE CONTENTS

Design Strength (psi)	3,000	4,000	5,000
Paste Content (%)	26	30	34
Air-Void Content (%)	3.1	3.1	3.1
Specific Surface (mm^{-1})	25.2	25.2	25.2
Spacing Factor (mm)	0.232	0.247	0.261

PARAMETERS OF AIR-VOID SYSTEM BASED ON PATSE CONTENT DETERMINED BY MICROSCOPIC EXAMINATION OF THE CONCRETE SPECIMEN

Air-Void Content (%)..... 3.1

Specific Surface (mm^{-1})..... 25.2

Spacing Factor (mm)..... 0.225

Air/Paste Ratio 0.13

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Date: MAY 19, 1987
File No: CANMET 1987
Report No: 7

REPORT OF TEST

MICROSCOPIC DETERMINATION OF PARAMETERS OF THE AIR-VOID SYSTEM IN HARDENED CONCRETE USING THE MODIFIED POINT-COUNT METHOD, ASTM: C457-71

Sample Identification: CANMET SAMPLE AVS-5A

Orientation of measured surface: NOT APPLICABLE

Total length of traverse (mm)..... 2380

Total number of stops observed..... 1899

PARAMETERS OF AIR-VOID SYSTEM BASED ON ASSUMED CONCRETE DESIGN STRENGTHS AND ASSUMED PASTE CONTENTS

Design Strength (psi)	3,000	4,000	5,000
Paste Content (%)	26	30	34
Air-Void Content (%)	4.7	4.7	4.7
Specific Surface (mm^{-1})	19.5	19.5	19.5
Spacing Factor (mm)	0.249	0.265	0.281

PARAMETERS OF AIR-VOID SYSTEM BASED ON PATSE CONTENT DETERMINED BY MICROSCOPIC EXAMINATION OF THE CONCRETE SPECIMEN

Air-Void Content (%)..... 4.7

Specific Surface (mm^{-1})..... 19.5

Spacing Factor (mm)..... 0.268

Air/Paste Ratio 0.15

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Date: MAY 19, 1987
File No: CANMET 1987
Report No: 8

REPORT OF TEST

MICROSCOPIC DETERMINATION OF PARAMETERS OF THE AIR-VOID SYSTEM IN HARDENED CONCRETE USING THE MODIFIED POINT-COUNT METHOD, ASTM: C457-71

Sample Identification: CANMET SAMPLE AVS-5B

Orientation of measured surface: NOT APPLICABLE

Total length of traverse (mm)..... 2413

Total number of stops observed..... 1925

PARAMETERS OF AIR-VOID SYSTEM BASED ON ASSUMED CONCRETE DESIGN STRENGTHS AND ASSUMED PASTE CONTENTS

Design Strength (psi)	3,000	4,000	5,000
Paste Content (%)	26	30	34
Air-Void Content (%)	4.5	4.5	4.5
Specific Surface (mm^{-1})	29.8	29.8	29.8
Spacing Factor (mm)	0.167	0.178	0.188

PARAMETERS OF AIR-VOID SYSTEM BASED ON PATSE CONTENT DETERMINED BY MICROSCOPIC EXAMINATION OF THE CONCRETE SPECIMEN

Air-Void Content (%)..... 4.5

Specific Surface (mm^{-1})..... 29.8

Spacing Factor (mm)..... 0.171

Air/Paste Ratio 0.16

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Date: MAY 19, 1987
File No: CANMET 1987
Report No: 9

REPORT OF TEST

MICROSCOPIC DETERMINATION OF PARAMETERS OF THE AIR-VOID SYSTEM IN HARDENED CONCRETE USING THE MODIFIED POINT-COUNT METHOD, ASTM: C457-71

Sample Identification: CANMET SAMPLE AVS-6A

Orientation of measured surface: NOT APPLICABLE

Total length of traverse (mm)..... 2435

Total number of stops observed..... 1942

PARAMETERS OF AIR-VOID SYSTEM BASED ON ASSUMED CONCRETE DESIGN STRENGTHS AND ASSUMED PASTE CONTENTS

Design Strength (psi)	3,000	4,000	5,000
Paste Content (%)	26	30	34
Air-Void Content (%)	3.8	3.8	3.8
Specific Surface (mm^{-1})	46.9	46.9	46.9
Spacing Factor (mm)	0.114	0.122	0.129

PARAMETERS OF AIR-VOID SYSTEM BASED ON PATSE CONTENT DETERMINED BY MICROSCOPIC EXAMINATION OF THE CONCRETE SPECIMEN

Air-Void Content (%)..... 3.8

Specific Surface (mm^{-1})..... 46.9

Spacing Factor (mm)..... 0.120

Air/Paste Ratio 0.13

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Date: MAY 19, 1987
File No: CANMET 1987
Report No: 10

REPORT OF TEST

MICROSCOPIC DETERMINATION OF PARAMETERS OF THE AIR-VOID SYSTEM IN HARDENED CONCRETE USING THE MODIFIED POINT-COUNT METHOD, ASTM: C457-71

Sample Identification: CANMET SAMPLE AVS-6B

Orientation of measured surface: NOT APPLICABLE

Total length of traverse (mm)..... 2418

Total number of stops observed..... 1929

PARAMETERS OF AIR-VOID SYSTEM BASED ON ASSUMED CONCRETE DESIGN STRENGTHS AND ASSUMED PASTE CONTENTS

Design Strength (psi)	3,000	4,000	5,000
Paste Content (%)	26	30	34
Air-Void Content (%)	3.9	3.9	3.9
Specific Surface (mm^{-1})	44.4	44.4	44.4
Spacing Factor (mm)	0.118	0.126	0.134

PARAMETERS OF AIR-VOID SYSTEM BASED ON PATSE CONTENT DETERMINED BY MICROSCOPIC EXAMINATION OF THE CONCRETE SPECIMEN

Air-Void Content (%)..... 3.9

Specific Surface (mm^{-1})..... 44.4

Spacing Factor (mm)..... 0.129

Air/Paste Ratio 0.13

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Date: MAY 19, 1987
File No: CANMET 1987
Report No: 11

REPORT OF TEST

MICROSCOPIC DETERMINATION OF PARAMETERS OF THE AIR-VOID SYSTEM IN HARDENED CONCRETE USING THE MODIFIED POINT-COUNT METHOD, ASTM: C457-71

Sample Identification: CANMET SAMPLE AVS-7A

Orientation of measured surface: NOT APPLICABLE

Total length of traverse (mm)..... 2426

Total number of stops observed..... 1935

PARAMETERS OF AIR-VOID SYSTEM BASED ON ASSUMED CONCRETE DESIGN STRENGTHS AND ASSUMED PASTE CONTENTS

Design Strength (psi)	3,000	4,000	5,000
Paste Content (%)	26	30	34
Air-Void Content (%)	4.3	4.3	4.3
Specific Surface (mm^{-1})	43.9	43.9	43.9
Spacing Factor (mm)	0.115	0.123	0.130

PARAMETERS OF AIR-VOID SYSTEM BASED ON PATSE CONTENT DETERMINED BY MICROSCOPIC EXAMINATION OF THE CONCRETE SPECIMEN

Air-Void Content (%)..... 4.3

Specific Surface (mm^{-1})..... 43.9

Spacing Factor (mm)..... 0.113

Air/Paste Ratio 0.17

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Date: MAY 19, 1987
File No: CANMET 1987
Report No: 12

REPORT OF TEST

MICROSCOPIC DETERMINATION OF PARAMETERS OF THE AIR-VOID SYSTEM IN HARDENED CONCRETE USING THE MODIFIED POINT-COUNT METHOD, ASTM: C457-71

Sample Identification: CANMET SAMPLE AVS-7B

Orientation of measured surface: NOT APPLICABLE

Total length of traverse (mm)..... 2424

Total number of stops observed..... 1934

PARAMETERS OF AIR-VOID SYSTEM BASED ON ASSUMED CONCRETE DESIGN STRENGTHS AND ASSUMED PASTE CONTENTS

Design Strength (psi)	3,000	4,000	5,000
Paste Content (%)	26	30	34
Air-Void Content (%)	4.7	4.7	4.7
Specific Surface (mm^{-1})	37.1	37.1	37.1
Spacing Factor (mm)	0.131	0.139	0.148

PARAMETERS OF AIR-VOID SYSTEM BASED ON PATSE CONTENT DETERMINED BY MICROSCOPIC EXAMINATION OF THE CONCRETE SPECIMEN

Air-Void Content (%)..... 4.7

Specific Surface (mm^{-1})..... 37.1

Spacing Factor (mm)..... 0.134

Air/Paste Ratio 0.17

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Date: MAY 19, 1987
File No: CANMET 1987
Report No: 13

REPORT OF TEST

MICROSCOPIC DETERMINATION OF PARAMETERS OF THE AIR-VOID SYSTEM IN HARDENED CONCRETE USING THE MODIFIED POINT-COUNT METHOD, ASTM: C457-71

Sample Identification: CANMET SAMPLE AVS-8A

Orientation of measured surface: NOT APPLICABLE

Total length of traverse (mm)..... 2414

Total number of stops observed..... 1926

PARAMETERS OF AIR-VOID SYSTEM BASED ON ASSUMED CONCRETE DESIGN STRENGTHS AND ASSUMED PASTE CONTENTS

Design Strength (psi)	3,000	4,000	5,000
Paste Content (%)	26	30	34
Air-Void Content (%)	6.3	6.3	6.3
Specific Surface (mm^{-1})	32.9	32.9	32.9
Spacing Factor (mm)	0.126	0.138	0.146

PARAMETERS OF AIR-VOID SYSTEM BASED ON PATSE CONTENT DETERMINED BY MICROSCOPIC EXAMINATION OF THE CONCRETE SPECIMEN

Air-Void Content (%)..... 6.3

Specific Surface (mm^{-1})..... 32.9

Spacing Factor (mm)..... 0.131

Air/Paste Ratio 0.23

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Date: MAY 19, 1987
File No: CANMET 1987
Report No: 14

REPORT OF TEST

MICROSCOPIC DETERMINATION OF PARAMETERS OF THE AIR-VOID SYSTEM IN HARDENED CONCRETE USING THE MODIFIED POINT-COUNT METHOD, ASTM: C457-71

Sample Identification: CANMET SAMPLE AVS-8B

Orientation of measured surface: NOT APPLICABLE

Total length of traverse (mm)..... 2391

Total number of stops observed..... 1908

PARAMETERS OF AIR-VOID SYSTEM BASED ON ASSUMED CONCRETE DESIGN STRENGTHS AND ASSUMED PASTE CONTENTS

Design Strength (psi)	3,000	4,000	5,000
Paste Content (%)	26	30	34
Air-Void Content (%)	5.5	5.5	5.5
Specific Surface (mm^{-1})	46.3	46.3	46.3
Spacing Factor (mm)	0.098	0.104	0.110

PARAMETERS OF AIR-VOID SYSTEM BASED ON PATSE CONTENT DETERMINED BY MICROSCOPIC EXAMINATION OF THE CONCRETE SPECIMEN

Air-Void Content (%)..... 5.5

Specific Surface (mm^{-1})..... 46.3

Spacing Factor (mm)..... 0.099

Air/Paste Ratio 0.21

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Date: MAY 19, 1987
File No: CANMET 1987
Report No: 15

REPORT OF TEST

MICROSCOPIC DETERMINATION OF PARAMETERS OF THE AIR-VOID SYSTEM IN HARDENED CONCRETE USING THE MODIFIED POINT-COUNT METHOD, ASTM: C457-71

Sample Identification: CANMET SAMPLE AVS-10A

Orientation of measured surface: NOT APPLICABLE

Total length of traverse (mm)..... 2416

Total number of stops observed..... 1927

PARAMETERS OF AIR-VOID SYSTEM BASED ON ASSUMED CONCRETE DESIGN STRENGTHS AND ASSUMED PASTE CONTENTS

Design Strength (psi)	3,000	4,000	5,000
Paste Content (%)	26	30	34
Air-Void Content (%)	7.3	7.3	7.3
Specific Surface (mm^{-1})	43.7	43.7	43.7
Spacing Factor (mm)	0.082	0.094	0.103

PARAMETERS OF AIR-VOID SYSTEM BASED ON PATSE CONTENT DETERMINED BY MICROSCOPIC EXAMINATION OF THE CONCRETE SPECIMEN

Air-Void Content (%)..... 7.3

Specific Surface (mm^{-1})..... 43.7

Spacing Factor (mm)..... 0.088

Air/Paste Ratio 0.26

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Date: MAY 19, 1987
File No: CANMET 1987
Report No: 16

REPORT OF TEST

MICROSCOPIC DETERMINATION OF PARAMETERS OF THE AIR-VOID SYSTEM IN HARDENED CONCRETE USING THE MODIFIED POINT-COUNT METHOD, ASTM: C457-71

Sample Identification: CANMET SAMPLE AVS-10B

Orientation of measured surface: NOT APPLICABLE

Total length of traverse (mm)..... 2389

Total number of stops observed..... 1906

PARAMETERS OF AIR-VOID SYSTEM BASED ON ASSUMED CONCRETE DESIGN STRENGTHS AND ASSUMED PASTE CONTENTS

Design Strength (psi)	3,000	4,000	5,000
Paste Content (%)	26	30	34
Air-Void Content (%)	8.7	8.7	8.7
Specific Surface (mm^{-1})	38.5	38.5	38.5
Spacing Factor (mm)	0.077	0.089	0.101

PARAMETERS OF AIR-VOID SYSTEM BASED ON PATSE CONTENT DETERMINED BY MICROSCOPIC EXAMINATION OF THE CONCRETE SPECIMEN

Air-Void Content (%)..... 8.7

Specific Surface (mm^{-1})..... 38.5

Spacing Factor (mm)..... 0.080

Air/Paste Ratio 0.32

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Date: MAY 19, 1987
File No: CANMET 1987
Report No: 17

REPORT OF TEST

MICROSCOPIC DETERMINATION OF PARAMETERS OF THE AIR-VOID SYSTEM IN HARDENED CONCRETE USING THE MODIFIED POINT-COUNT METHOD, ASTM: C457-71

Sample Identification: CANMET SAMPLE AVS-11A

Crientation of measured surface: NOT APPLICABLE

Total length of traverse (mm)..... 2417

Total number of stops observed..... 1928

PARAMETERS OF AIR-VOID SYSTEM BASED ON ASSUMED CONCRETE DESIGN STRENGTHS AND ASSUMED PASTE CONTENTS

Design Strength (psi)	3,000	4,000	5,000
Paste Content (%)	26	30	34
Air-Void Content (%)	9.1	9.1	9.1
Specific Surface (mm^{-1})	45.8	45.8	45.8
Spacing Factor (mm)	0.062	0.072	0.081

PARAMETERS OF AIR-VOID SYSTEM BASED ON PATSE CONTENT DETERMINED BY MICROSCOPIC EXAMINATION OF THE CONCRETE SPECIMEN

Air-Void Content (%)..... 9.1

Specific Surface (mm^{-1})..... 45.8

Spacing Factor (mm)..... 0.068

Air/Paste Ratio 0.32

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CIVIL - CONCRETE - MATERIALS

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Date: MAY 19, 1987
File No: CANMET 1987
Report No: 18

REPORT OF TEST

MICROSCOPIC DETERMINATION OF PARAMETERS OF THE AIR-VOID SYSTEM IN HARDENED CONCRETE USING THE MODIFIED POINT-COUNT METHOD, ASTM: C457-71

Sample Identification: CANMET SAMPLE AVS-11B

Orientation of measured surface: NOT APPLICABLE

Total length of traverse (mm)..... 2403

Total number of stops observed..... 1917

PARAMETERS OF AIR-VOID SYSTEM BASED ON ASSUMED CONCRETE DESIGN STRENGTHS AND ASSUMED PASTE CONTENTS

Design Strength (psi)	3,000	4,000	5,000
Paste Content (%)	26	30	34
Air-Void Content (%)	8.5	8.5	8.5
Specific Surface (mm^{-1})	50.5	50.5	50.5
Spacing Factor (mm)	0.061	0.070	0.079

PARAMETERS OF AIR-VOID SYSTEM BASED ON PATSE CONTENT DETERMINED BY MICROSCOPIC EXAMINATION OF THE CONCRETE SPECIMEN

Air-Void Content (%)..... 8.5

Specific Surface (mm^{-1})..... 50.5

Spacing Factor (mm)..... 0.066

Air/Paste Ratio 0.30

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Date: MAY 19, 1987
File No: CANMET 1987
Report No: 19

REPORT OF TEST

MICROSCOPIC DETERMINATION OF PARAMETERS OF THE AIR-VOID SYSTEM IN HARDENED CONCRETE USING THE MODIFIED POINT-COUNT METHOD, ASTM: C457-71

Sample Identification: CANMET SAMPLE AVS-12A

Orientation of measured surface: NOT APPLICABLE

Total length of traverse (mm)..... 2388

Total number of stops observed..... 1905

PARAMETERS OF AIR-VOID SYSTEM BASED ON ASSUMED CONCRETE DESIGN STRENGTHS AND ASSUMED PASTE CONTENTS

Design Strength (psi)	3,000	4,000	5,000
Paste Content (%)	26	30	34
Air-Void Content (%)	9.8	9.8	9.8
Specific Surface (mm^{-1})	48.0	48.0	48.0
Spacing Factor (mm)	0.055	0.064	0.072

PARAMETERS OF AIR-VOID SYSTEM BASED ON PATSE CONTENT DETERMINED BY MICROSCOPIC EXAMINATION OF THE CONCRETE SPECIMEN

Air-Void Content (%)..... 9.8

Specific Surface (mm^{-1})..... 48.0

Spacing Factor (mm)..... 0.061

Air/Paste Ratio 0.34

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Date: MAY 19, 1987
File No: CANMET 1987
Report No: 20

REPORT OF TEST

MICROSCOPIC DETERMINATION OF PARAMETERS OF THE AIR-VOID SYSTEM IN HARDENED CONCRETE USING THE MODIFIED POINT-COUNT METHOD, ASTM: C457-71

Sample Identification: CANMET SAMPLE AVS-12B

Orientation of measured surface: NOT APPLICABLE

Total length of traverse (mm)..... 2399

Total number of stops observed..... 1914

PARAMETERS OF AIR-VOID SYSTEM BASED ON ASSUMED CONCRETE DESIGN STRENGTHS AND ASSUMED PASTE CONTENTS

Design Strength (psi)	3,000	4,000	5,000
Paste Content (%)	26	30	34
Air-Void Content (%)	9.8	9.8	9.8
Specific Surface (mm^{-1})	50.6	50.6	50.6
Spacing Factor (mm)	0.052	0.060	0.068

PARAMETERS OF AIR-VOID SYSTEM BASED ON PATSE CONTENT DETERMINED BY MICROSCOPIC EXAMINATION OF THE CONCRETE SPECIMEN

Air-Void Content (%)..... 9.8

Specific Surface (mm^{-1})..... 50.6

Spacing Factor (mm)..... 0.065

Air/Paste Ratio 0.31

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